

CLAIMS

1. (previously presented) A method for reducing voiding between a first layer and a second layer formed over said first layer during a semiconductor annealing process, the method comprising:

forming a counter tensile layer over said second layer, said second layer comprising a titanium nitride cap layer, wherein said counter tensile layer is selected from a material such that an opposing directional stress is created between said counter tensile layer and said second layer, with respect to a directional stress created between said first layer and said second layer.

2. (original) The method of claim 1, wherein said counter tensile layer is selected to be the same material as said first layer.

3. (original) The method of claim 2, wherein said first layer and said counter tensile layer comprise a refractory metal.

4. (original) The method of claim 3, wherein said refractory metal comprises cobalt.

5. (cancelled)

6. (original) A method for forming a metal silicide contact for a semiconductor device, the method comprising:

forming a refractory metal layer over a substrate, including active and non-active area of said substrate;

forming a cap layer over said refractory metal layer; and

forming a counter tensile layer over said cap layer, wherein said counter tensile layer is selected from a material such that an opposing directional stress is created

between said counter tensile layer and said cap layer, with respect to a directional stress created between said refractory metal layer and said cap layer.

7. (original) The method of claim 6, wherein said counter tensile layer is selected to be the same material as said refractory layer.

8. (original) The method of claim 7, wherein said refractory metal layer and said counter tensile layer comprise cobalt.

9. (original) The method of claim 8, wherein said cap layer comprises a titanium nitride cap layer.

10. (original) The method of claim 6, wherein:
said refractory metal layer is formed at a thickness of about 4 to about 7 nanometers;
said cap layer is formed at a thickness of about 10 to about 20 nanometers;
and
said counter tensile layer is formed at a thickness of about 10 to about 30 nanometers.

11. (original) The method of claim 6, wherein:
said refractory metal layer is formed at a thickness of about 4 to about 7 nanometers;
said cap layer and said counter tensile layer are formed at a combined thickness of about 15 to about 30 nanometers.

12. (original) The method of claim 6, further comprising annealing the substrate so as to cause portions of said refractory metal layer to react with active areas of said substrate.